

FIG. 1A

MAQTQGTTRRKVCYYDGDVGNVYYQGQHPMKPHRIRMTHNLLN
YGLYRKMEIYRPHKANAEEMTKYHSDDYIKFLRSIRPDNMSEYSKQMQRNFVGEDCPV
FDGLFEFCQLSTGGSVASAVKLNKQQTDI VNWAGLHHAKKSEASGFCYVNDIVLAI
LELLKYHQRVLYIDIDIHHGDGVEEAFYTTDRVMTVSFHKYGEYFFGTGDLRDIGAGK
GKYAVYPLRDGIDDES YEAI FKPVM SKVMEMFQPSAVLQCGSDSLSGDRLGCFNL
TIKGHAKCVEFVKSFNLPMLMLGGGYTIRNVARCWTYETAVALDTEIPNELPYNDYF
EYFGPDFKLHISPSNMTNQNTNEYLEKIKQRLFENLRMLPHAPGVQMQAIPEDAIP EE
SGDEDEDDPKRISICSSDKRIACEEEFSDSEEEGEGGRKNSSNFKKAKRVKTEDEKE
KDPEEKKEVTEEEKTEKPEAKGVKEEVKLA (SEQ ID NO:1)

FIG. 1A

FIG. 1B

1 atgtctgggg tctctgcccg ctgggtgctgc tgttccccac tcggtcatcc tgagaacaca
 61 gcctgagcgr ctctgtcact cggggtagac cagcgggga ggcgagcaag atggcgacaga
 121 cgcagggcac cggaggaaa gtctgttact actacgacgg gcatgttga aattactatt
 181 atggacaagg ccacccaatg aagcctcacc gaatccgcat gactcataat ttgctgctca
 241 actatggtct ctaccgaaa atggaatct atcgccctca caagccaat gctgaggaga
 301 tgaccaagta ccacagcag gactacatta aattcttgcg ctccatccgt ccagataaca
 361 tgtcggagta cagcaagcag atgcagagat tcaacgttgg tgaggactgt ccagtattcg
 421 atggcctgtt tgagttctgt cagttgtcta ctggtggttc tgtggcaagt gctgtgaaac
 481 ttaataagca gcagacggac atcgccgtga attgggctgg gggcctgcac catgcaaaga
 541 agtccgaggc atctggcttc tgttacgtca atgatatcgt ctgggccatc ctggaactgc
 601 taaagtatca ccagagggtg ctgtacattg acattgatat tcaccatggt gacggcgtgg
 661 aagaggcctt ctacaccag gaccgggtca tgactgtgtc ctttcataag tatggagagt
 721 acttcccagg aactggggac ctacgggata ccggggctgg caagacaaag tattatgctg
 781 ttaactaccc gctccgagac gggattgatg acgagtccta tgaggccatt ttcaaagccgg
 841 tcatgtccaa agtaatggag atgttccagc ctagtgcggt ggtcttacag tgtggctcag
 901 actccctatc tggggatcgg ttaggttgct tcaatctatc tatcaaggga cagccaagt
 961 gtgtggaatt tgtcaagagc tttaacctgc ctatgctgat gctgggaggg ggtggttaca
 1021 ccattcgtaa cgttgcccgg tgctggacat atgagacagc tggggccctg gatacggaga
 1081 tccctaataga gcttccatag aatgactact ttgaatactt tggaccagat ttcaaagctcc
 1141 acatcagtcg tccaatatg actaaccaga acacgaatga gtacctggag aagatcaaac
 1201 agcgactgtt tgagaaacctt agaattgctgc cgcacgcacc tggggtccaa acgcaggcga
 1261 ttcctgagga cgccatccct gaggagagtg gcgatgagga cgaagacgac cctgacaagc
 1321 gcatctcgat ctgctcctct gacaaacgaa ttgcctgtga ggaagagttc tccgattctg
 1381 aagaggaggg agaggggggc cgcaagaact cttccaaact caaaaaagcc aagagagtca
 1441 aaacagagga tgaaaaagag aaagacccag aggagaagaa aggaatcacc gaagaggaga
 1501 aaaccaagga ggagaagcca gaagccaaag ggtcaagga ggaggccaag ttggcctgaa
 1561 tggacctctc cagctctggc ttcctgctga gtccctcacg tttctttccc c (SEQ ID NO:2)

FIG. 1B

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MAYSQGGKKCKVCYYDGDIGNYYYGQGHMPKPHRIRMTHNLLL
NYGLYRKMEIYRPHKATAEEMTKYHSDEYIKFLRSIRPDNMSEYSKOMHIPFNVGEDCP
AFDGLFEFCQLSTGGSVAGAVKLNRRQQTDMAVNWAGGLHHAKKYEASGFCYVNDIVLA
ILLELLKYHQRVLYIDIDIHHRGDGVEEAFYTDDRVMTVSFYGEYFPGTGLRDIGAG
KGKYAVNFPNCDGIDDESYGQIFKPIISKVMEYQPSAVVLQCGADSLSGDRLGCFN
LTVKGHAKCVEVVKTFNLP LLMLGGGGYTI LRNVARCWTYETAVALDCEIPNELPYNDY
FEYFGPDFKLHISPSNMTNQNTPEYMEKIKQRLFENLRMLPHAPGVQMQAIPEDAVHE
DSGDEGEDPDKRISIRASDKRIACDEEFSDESEGEGRNVADHKKGAKARIEED
KKETEDKKTDVKEEDKSKDNSGEKTDTKGKSEQLSNP (SEQ ID NO:3)

FIG. 2A

1 cgccgagctt tcggcacctc tccggggtgg taccgagcct tccgggcgcc cctcctctc
61 ctcccaccgg cctgcccttc ccgcggggac tatcgccccc acgtttccct cagccctttt
121 ctctcccgcc cgagccgagg cggcagcagc agcagcagca gcagcaggag gaggagcccg
181 gtggcgccgg tggccgggga gcccatggcg tacagtcaag gagcgggcaa aaaaaaagtc
241 tgctactact acgacggtga tattggaat tattattatg gacaggggtca tcccatgaag
301 cctcatagaa tccgcatgac ccataacttg ctgttaaat atggcttaca cagaaaaaatg
361 gaaatatata gggcccataa agccactgcc gaagaaatga caaaatatca cagtgatgag
421 tatatcaaat ttctacggtc aataagacca gataacatgt ctgagtatag taagcagatg
481 catatattta atgttgga gaattgtcca gcttttga gactcttga gttttgtcag
541 ctctcaactg gcggttcagt tgctggagct gtgaagttaa ccgacaaca gactgatatg
601 gctgttaatt gggctggagg attacatcat gctaagaaat acgaagcatc aggatcctgt
661 tacgttaatg atattgtgct tgccatcctt gaattactaa agtatcatca gagagtctta
721 tatatcgata tagatatcca tcatgggtgat ggtgtcgaag aagcttttta tacaacagat
781 cgtgtaatag cggtatcatt ccataaatat ggggaatact ttcctggcac aggagacttg
841 agggatatgg gtgctggaaa aggcaaatac tatgctgtca attttccaat gtgtgatggt
901 atagacgatg agtcatatgg gcagatatatt aagcctatta tctcaagggt gatggagatg
961 tatcaacct a gtgctgtggt attacagtgt gctaaatgtg tagaagtgtt aaaaactttt
1021 ggttgtttca atctaacagt caaaggctcat tggagggagg ggctacacaa tccgtaatgt tgctcgatgt
1081 aacttaccat tactgatgct tggagggagg tggtagaggt ggctacacaa tccgtaatgt tgctcgatgt
1141 tggacatatg agactgcagt tggccttgat tgtgagattc ccaacgagtt gccatataat
1201 gattactttg agtattttgg accagacttc aactgcata taagtcttc aaacatgaca
1261 aaccagaaca ctccagaata tacggaaaag ataaaaacag caagctattc agatcagac
1321 atgttacctc atgcacctgg agaagatcca gacaagagaa ttctctatcg agcatcagac
1381 gacagtggag atgaagatgg agaattctca gattctgagg atgaaggaga aggaggtcga
1441 aagcggatag cttgtgatga agaattctca gattctgagg atgaaggaga aggaggtcga
1501 agaaaatgtgg ctgatcataa gaaaggagca aagaaagcta gaattgaaga agataagaaa
1561 gaaacagagg acaaaaaaac agacgttaag gaagaaagata aatccaagga caacagtgggt
1621 gaaaaaacag ataccaaaag aaccaaataca gaacagctca gcaacccctg aatctgacag
1681 tctcaccaat ttcagaaaat cattaaaaag aaaaatatga aaggaaaaatg tttcttttt
1741 gaagacttct ggcttcatatt tatactactt tggcatggac tgtatttatt ttcaaatggg
1801 actttttcgt ttttggtttt ctgggcaagt ttatatgtga gattttctaa ttatgaagca
1861 aaatttcttt tctccacct gctttatgtg atagtattta aaattgatgt gagttattat
1921 gtcaaaaaaa ctgatctatt aaagaagtaa ttggcctttc tgagctgaaa aaaaaaaaaa
1981 aaag (SEQ ID NO:4)

MAKTWAYFYDPDVGNFHYGAGHPMKPHRLALTHSLVLYGLYKK

MIVFKPYQASQHDMCRFHSEDIYDFLQVSPNTMQGFTKSLNAPNVGDDCPVFPGLFE

FCSRYTGASLQGATQLNNKICDIANWAGGLHHAKKFEASGFCYVNDIVIGILELLKY

HPRVLYIDIDIHHGDGVQEA FYLTDRVMTVSFHKYGN YFFPGTGM YEVG AESGRY YC

LNVP LRGID DQSYKHLFQPVINQVVD FYQPTCIVLQCGADSLGCDRLGCFNLSIRGH

CEC VEYKSFNIPPLLVLGGGYTVRNVARCWTYETSL LVEEAI SEELPYSEYFEYFAP

DFTLHPDVSTRIENQSRQYLDQIRQTIFENLKM LNHAPSVQIHDVPADLLTYDRTDE

ADAEERGPEENYSRPEAPNEFYDGDHDNDKESDVEI (SEQ ID NO:5)

FIG. 3A

1	ggaattcgcg	gccgcggcgg	gcgcgggagg	tgcggggcct	gctccgcgg	gcaccatggc
61	caagaccgtg	gcctatttct	acgaccccg	cgtgggcaac	ttccactacg	gagctggaca
121	ccctatgaag	cccatacgcc	tggcattgac	ccatagcctg	gtcctgcatt	acggtctcta
181	taagaagatg	atcgtcctca	agccatacca	ggcctcccaa	catgacatgt	gccgcttcca
241	ctccgaggac	tacattgact	tcctgcagag	agtcagcccc	accaatatgc	aaggcttcac
301	caagagtctt	aatgccttca	acgtaggcga	tgactgccc	gtgtttcccg	ggctctttga
361	gttctgctcg	cgttacacag	gcgcatactct	gcaaggagca	accagctga	acaacaagat
421	ctgtgatatt	gccattaaact	gggctggtgg	tctgcaccat	gccaagaagt	ttgaggcctc
481	tggcttctgc	tatgtcaacg	acatttgtgat	tggcatcctg	gagctgctca	agtaccaccc
541	tgggtgctc	tacattgaca	ttgacatcca	ccatggtgac	ggggttcaag	aagctttcta
601	cctcactgac	cgggtcatga	cggtgtcctt	ccacaaatac	ggaaattact	tcttccctgg
661	cacaggtgac	atgtatgaag	tcggggcaga	gagtggccgc	tactactgtc	tgaacgtgcc
721	cctgcgggat	ggcattgatg	accagagtta	caagcacctt	ttccagccgg	ttatcaacca
781	ggtagtggac	ttctaccaac	ccacgtgcat	tgtgctccag	tgtggagctg	actctctggg
841	ctgtgatcga	ttgggctgct	ttaacctcag	catccgaggg	catggggaat	gcgttgaata
901	tgtcaagagc	ttcaatatcc	ctctactcgt	gctgggtgggt	ggtgggttata	ctgtccgaaa
961	tgttgcccg	tgtggacat	atgagacatc	gctgctggca	gaagaggcca	ttagtgagga
1021	gcttccctat	agtgaatact	tcgagtactt	tgcccagac	ttcacacttc	atccagatgt
1081	cagcacccgc	atcgagaatc	agaactcacg	ccagtatctg	gaccagatcc	gccagacaat
1141	ctttgaaaac	ctgaagatgc	tgaacctgc	acctagtgtc	cagattcatg	acgtgcctgc
1201	agacctcctg	acctacgaca	ggaccgatga	ggccgatgca	gaggagaggg	gtcctgagga
1261	gaactatagc	agccagagg	catccaatga	gttctatgat	ggagaccatg	acaatgacaa
1321	ggaagcgat	gtggagattt	aagagtggct	tgggatgctg	tgtcccaagg	aatttctttt
1381	cacctcttgg	aagggctgga	gggaaaagga	gtggctccta	gagtcctggg	ggtcacccca
1441	ggggcttttg	ctgactctgg	gaaagagtct	ggagaccaca	tttggttctc	gaaccatcta
1501	cctgcttttc	ctctctctcc	caaggactga	caatggtaac	tattagggat	gagatacaga
1561	caaggatagc	tatctgggac	attattggca	gtgggcccctg	gaggcagtcc	ctagccccc
1621	ttgcccctta	ttcttccct	gcttccctcg	aaccagaga	tttttgaggg	atgaacgggt
1681	agacaaaggac	tgagattgcc	tctgacttcc	tcctcccctg	ggttctgacc	ttcttctctc
1741	ccttgcttcc	agggaaagatg	aagagagaga	gatttggaag	gggctctggc	tcctaatac
1801	ctgaatccca	gatgatggga	agtatgtttt	caagtgtggg	gaggatatga	aaatgttctg
1861	ctctcacttt	tggctttatg	ttcattttac	cactgttttt	atccaataaa	ctaagtcggt
1921	attttttgta	cctttgatgg	tttagcggcc	gcgc (SEQ ID NO:6)		

FIG. 3B

APPROVED	3. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

FIG. 4A

MLAMKHQQELLEHQKLERHRQEQELEKQHREQKLQQLKNKEKG
 KESAVASTEVMKMLQEFVLNKKKALAHPNLNHCISSCPRYWGKTQHSSLDQSSPPQS
 GVSTSYNHPVLGMYDAKDDFPLRKTASEP NLKLSRLKQKVAERRSSPLLRRKDGPPV
 TALKKRPLDVTDSACSSAPGSGPSSPNNSSGSVAENGIAPAVPSIPAETSLAHLVA
 REGSAAPLPLYTSPSLPNI TLGLPATGPSAGTAGQQDTERLTLPALQQRISLFPFGTHL
 TPYLSTSPLERDGGAHSP LLQHMVLLLEQPPAQA PLVTGLGALPLHAQSLVGADRVSP
 SIHKLRQHRPLGR TQSA PLPQNAQALQHLVIQQHQHQQFLEKHKQQFQQQQLQMNKIIP
 KPSEPARQPESHPEETEEELREHQALLDEPYLDRLPGQKEAHAQAGVQVKQEP IESDE
 EEAEPREVEFGORQ PSEQELLFRQQA LLEQQR IHQLRNYQASMEAAGIPVSFGGHR
 PLSRAQSSPASATFPVSVQEPPTKPRFTTGLVYDTLMLKHQCTCGSSSSSHPEHAGRIQ
 SIWSRLQETGLRGKCECIRGRKATLEELQTVHSEHTLLYGTNPLNRQKLD SKKLLGS
 LASV FVRLPCGGVGVDSDTIWNEVHSAGAA RLAVGCVVELVFKVATGELKNGFAVVRP
 PGHHAEESTPMGFCYFNSVA AAKLLQQR LSVSKILLIVDWDVHHGNGTQQAFYS DPSV
 LYMSLHRYDDGNFFPGSGAPDEVGTGPGVGFNVMMAFTGGLDPPMGDAEYLA AFRTVV
 MPIASEFAPDVVLASSGFDAVEGHPTPLGGYNLSARCFGYLTKQLMGLAGGRIVLAL E
 GGHDLT AICDASEACVSALLGNELDPLPEKVLQQRPNANAVRSMEKVM EIH SKYWRCL
 QRTTSTAGRSLIEAQTCENEEAETVTAMASLSVGKPAEKRPD EEPMEEEPPPL (SEQ ID NO:7)

FIG. 4A

FIG. 4B-1
FIG. 4B-2
FIG. 4B-3
FIG. 4B-4
FIG. 4B-5

FIG. 4B

1 ggaggttggtg gggccgcccgc cgtccccgcg gccgcccagag cccgagcccgc
61 agccccgcgca ccgccccgcg ccgccccgga acagcctccc agcctgggccc
121 ccgcgccgcg ccgtggcccgc tcgccccgcg agccccagcc cgcgcgcccgc
181 cgggtggcgg cgcaggctga ggagatgcgg cgggagcggg ctagagcccgc
241 ccgccccgcg ccgccccggt aagcgcagcc cggccccggc cattgtcccgc
301 cgcgccgccc gcgccccgcg cagcctgcag gccttggagc cgcgggcagg tggacgcccgc
361 cggtcacac ccgccccgcg ccgccccggt ggagcgggg gccagcgtg gccgccccgc
421 gtgggacccg ccggtcccca cggccccgcg gcccctctg gaccttcca cccgccccgc
491 gaggcggctt cgcgccgccc ggccccggcg cgggggtggg cagggcaggc agcggcgcccgc
541 tctcccggtg cggggccccgc gccccccgag caggttcac cgcagaagcc agcggacgccc
601 tctgttcaac ttgtgggtta cctggctcat gagaccttg cggcagagct cggcgcctga
661 acgtctgtga ccagccctc accgtccccg tacttgtatg tgttggcggg agtttgagc
721 tcgttgagc tatcgtttcc gtggaattt tgagccattt cgaatcacct aaaggagtgg
781 acattgctag caatgagctc ccaaagccat ccagatggac ttcttggccg agaccagcca
841 gtggagctgc tgaatccccgc ccgcgtgaac cacatgcca gcacggtga tgtggccacg
901 gcgctgcctc tgcaagtggc cccccggca gegccatgg acccgccct ggaccaccag
961 ttctcactgc ctgtggcaga gccggccctg cgggagcagc agctgcagca ggagctcctg

FIG. 4B-1

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FIG. 4B-2

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1021 gcgctcaagc agaagcagca gatccagagg cagatcctca tcgccgagtt ccagaggcag
1081 cacgagcagc tctcccgga gcacgaggcg cagctccacg agcacatcaa gcaataacag
1141 gagatgctgg ccatgaagca ccagcaggag ctgctggaac accagcggaa gctggagagg
1201 caccgccagg agcaggagct ggagaagcag caccgggagc agaagctgca gcagctcaag
1261 aacaaggaga agggcaaaaga gagtgcctg gccagcacag aagtgaagat gaagttacaa
1321 gaatttgtcc tcaataaaaa gaggcgctg gccaccgga atctgaacca ctgcaactcc
1381 agagaccctc gctactggtg gagggaacg cagcacagtt ccttgacca ggttctcca
1441 cccagagcg gatgtcgac ctctatgaa aacagcttct caccggtcc tgggaatgta cgacgccaaa
1501 gatgacttcc ctctaggaa acgagcagc cccctgttac gcaggaaaga gtccaggcta
1561 aagcagaaag tggccgaaag tccgttggat tccgggagcg tcgcgtggag tgtggcagc
1621 gtcaactgctc taaaaaagcg ccagctcacc caacaacagc acgagtttgg cgacagact
1681 ggctccggac ccagctcacc tcccagcat cccggcggag acatcgccat ccttgccaa
1741 gcgcccgcgg gaaggtcgg ccactccact ctctgcgggc accggggggc agcaggacac
1801 gaaggtcgg gcgctccact cccctctac tcccctctcc gaggctctcc acagccctct
1861 gccctgcctg acccttcccg cctccagca cgccttggg accggcaca gcacagcct
1921 acccttcccg cctccagca cgccttggg accggcaca gcacagcct tctgcagcac
1981 ctgagcacct tggagcagc cccactgga ggggacgga ggggacgga acagccctct
2041 atggtcttac cccctccagc cccactgga ggggacgga ggggacgga acagccctct
2101 cccctccagc cccactgga ggggacgga ggggacgga ggggacgga acagccctct
2161 cggcagcacc tggcagcacc tggcagcacc tggcagcacc tggcagcacc acagccctct
2221 ctgcagcacc tggcagcacc tggcagcacc tggcagcacc tggcagcacc acagccctct
2281 tccagcagc tggcagcacc tggcagcacc tggcagcacc tggcagcacc acagccctct
2341 cagccggaga gggcgggaga gggcgggaga gggcgggaga gggcgggaga acagccctct
2401 gacgagccct cagcgggaga gggcgggaga gggcgggaga gggcgggaga acagccctct
2461 caggtgaagc gggcgggaga gggcgggaga gggcgggaga gggcgggaga acagccctct
2521 gaggcgggga gggcgggaga gggcgggaga gggcgggaga gggcgggaga acagccctct
2581 ctggagcagc gggcgggaga gggcgggaga gggcgggaga gggcgggaga acagccctct
2641 atcccctgtt gggcgggaga gggcgggaga gggcgggaga gggcgggaga acagccctct
2701 gccaccttcc gggcgggaga gggcgggaga gggcgggaga gggcgggaga acagccctct
2761 gtgtatgaca gggcgggaga gggcgggaga gggcgggaga gggcgggaga acagccctct
2821 gagcacgccc gggcgggaga gggcgggaga gggcgggaga gggcgggaga acagccctct

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FIG. 4B-2

2881 aaatgcgagt gcatccgcgg acgcaaggcc accctggaag agctacagac ggtgactcgg
2941 gaagccacaca cctcctgtga tggcacgaac cccctcaacc ggcagaaact ggacagtaag
3001 aaactcttag gctcgtcgc ctcgtgttc ctccgctcc ctgcggtgg tgttggggtg
3061 gacagtgaca ccatatggaa cgaggtgcac tcggcggggcagccgcct ggctgtgggg
3121 tgcgtggtag agctggtcct caagtgggc acaggggagc tgaataatgg ctttgctgtg
3181 gtccgcccc ctggacacca tggcagccaa gcttctgcag agcagccca tgggctttg ctacttcaac
3241 tccgcggccg tggcagccaa acgtgcacca ccgctacgac gatgggaact tcttcccagg cagcggggct
3301 gtggactggg acgtgcacca tggaaacggg acccagcagg ctttctacag cgaccctagc
3361 gtccctgtaca tgtccctcca tggcagccaa ccgctacgac gatgggaact tcttcccagg cagcggggct
3421 cctgatgagg tggcagccaa tggcagccaa ccgctacgac gatgggaact tcttcccagg cagcggggct
3481 ggcctggacc ccccatggg ggcagctgag tacttggcgg ccttcagaa ccttggtaatg
3541 ccgatcgcca ggcagtttgc cccggtatg cccggtatg aacctctccg ccagatgctt cgggtacctg
3601 gagggccacc tcatggagat cccagaaag ggttttacag caaagaccca atgcaaacgc tgtccgttcc
3661 acgaagcagc tcatggagat cccagaaag ggttttacag caaagaccca atgcaaacgc tgtccgttcc
3721 gacctgaccg ccatgttgcga cccctcggaa ccatgtgtt tctgccttgc tgccttgcg gggagggccac
3781 cttgatcctc tccagaaag tcatggagat cccagaaag ggttttacag caaagaccca atgcaaacgc tgtccgttcc
3841 atggagaaag tcatggagat cccagaaag ggttttacag caaagaccca atgcaaacgc tgtccgttcc
3901 acagcggggc gttctctgat cctcgtgtc cgtggacgtg aagcccgccg aaaagagacc agatgaggag
3961 accgccatgg cctcgtgtc cctcgtgtc cgtggacgtg aagcccgccg aaaagagacc agatgaggag
4021 cccatggaag aggagccgcc cctcgtgtc cgtggacgtg aagcccgccg aaaagagacc agatgaggag
4081 tgtctctgtc ttgaagctca ggaagcctca ggaagcctca ggaagcctca ggaagcctca ggaagcctca
4141 gggctctctt ggaagcctca ggaagcctca ggaagcctca ggaagcctca ggaagcctca ggaagcctca
4201 cgccagggc cagaggtctc cagaggtctc cagaggtctc cagaggtctc cagaggtctc cagaggtctc
4261 aacacgggac agacggcggc cagaggtctc cagaggtctc cagaggtctc cagaggtctc cagaggtctc
4321 tggcgggtcc cgcaagggac cagaggtctc cagaggtctc cagaggtctc cagaggtctc cagaggtctc
4381 tggcgaattc agttgacacg agttgacacg agttgacacg agttgacacg agttgacacg agttgacacg
4441 caaacttgat taaaactggt taaaactggt taaaactggt taaaactggt taaaactggt taaaactggt
4501 aaccactcga ctcatctgt ctcatctgt ctcatctgt ctcatctgt ctcatctgt ctcatctgt
4561 gggccgcctc tgtgaaccat tgtgaaccat tgtgaaccat tgtgaaccat tgtgaaccat tgtgaaccat
4621 gagggacctt taaagaaaac taaagaaaac taaagaaaac taaagaaaac taaagaaaac taaagaaaac
4681 cttgagtttc tcaaaagcca tcaaaagcca tcaaaagcca tcaaaagcca tcaaaagcca tcaaaagcca

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FIG. 4B-4

FIG. 4B-4

4741	gtggatttt	gtggctgggt	tttctgaagt	ctgaggaaca	atgccttaag	aaaaacaaa
4801	cagcaggaat	cggctgggaca	gtttcctgtg	gccagccgag	cctggcagtg	ctggcacccg
4861	gagctggcct	gacgcctcaa	gcacgggcac	cagccgtcat	ctccggggcc	aggggctgca
4921	gccggcggt	cctgttttg	ctttatgtct	gtttaaaaa	aatggaggtg	gttccaaaaa
4981	agtggcaaat	ccgcttgag	gttttgaagt	ccaacaaatt	ttaaacgaat	ccaaagtgtt
5041	ctcacacgtc	acatacgatt	gagcatctcc	atctggtcgt	gaagcatgtg	gtaggcacac
5101	ttgcagtgtt	acgatacgaa	tgctttttat	taaaagcaag	tagcatgaag	tattgcttaa
5161	atttttaggt	taaataaata	tatatatgta	taatatatat	tccaatgtat	tccaagctaa
5221	gaaacttact	tgattcttat	gaaatcttga	taaaatat	ataatgcat	tatagaaaaa
5281	gtatatatat	atatataaaa	tgaatgcaga	ttgcgaaggt	ccctgcaaat	ggatgggcttg
5341	tgaatttgct	ctcaaggtgc	ttatggaag	ggatcctgat	tgattgaaat	tcatgttttc
5401	tcaagctcca	gattggctag	atctcagatc	gccaacacat	tcgccactgg	gcaactaccc
5461	tacaagtttg	tactttcatt	ttaattattt	tctaacagaa	ccgctcccgt	ctccaagcct
5521	tcatgcacat	atgtaccta	tgagttttta	tagcaaaagaa	tataaat	ctgttgattt
5561	ttgtatgaat	tttttcacaa	aaagatcctg	aataagcatt	gttttatgaa	ttttacattt
5641	ttcctcacca	tttagcaatt	ttccgaatgg	taataatgtc	taaatctttt	tcctttctga
5701	attcttgctt	gtacattttt	ttttaccttt	caaagggttt	taattatttt	tgtttttatt
5761	tttgtacgat	gagttttctg	cagcgtacag	aattgttgct	gtcagattct	attttcagaa
5821	agtgaaggga	gggaccgtag	gtcttttcgg	agtgcacca	acgattgtgt	ctttcctgg
5881	ctgtccctagg	agctgtataa	agaagcccag	gggctctttt	taactttcaa	cactagtagt
5941	attacgaggg	gtggtgtgtt	tttcccctcc	gtggcaagg	caggaggggt	tgcttaggat
6001	gcccggccac	cctgggaggc	ttgccagatg	ccggggggcag	tcagcat	tgaaactcat
6061	gtttaaaact	ctctgaccac	atcgtcagga	tagaatctta	acttgagttt	tccaaacacc
6121	ttttgagcat	gtcagcaatg	catggggcac	acgtggggct	ctttaccac	ttgggttttt
6181	ccactgcagc	cacgtggcca	gccctggatt	ttggagcctg	tggtgcaag	gaaccagg
6241	acccttgttg	cctggtgaac	ctgcaggagg	ggtatgattg	cctgaccagg	acagccagtc
6301	tttactcttt	ttctcttcaa	cagtaactga	cagtcacgtt	ttactggtaa	cttattttcc
6361	agcacatgaa	gccaccagtt	tcatccaaa	gtgtatat	ggttcagact	tgggggcaga
6421	agttcagaca	caccgtgctc	aggagggacc	cagagccgag	tttcggagtt	tggtaaagtt
6481	tacagggtag	cttctgaaat	taactcaaac	ttttgaccaa	atgagtgcag	attcttggat
6541	tcacttgggtc	actgggctgc	tgatggtcag	ctctgagaca	gtggtttgag	agcaggcaga

FIG. 4B-5

FIG. 4B-5

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6601	acggtcttgg	gacttggttg	actttccctt	ccctggtggc	cactctttgc	tctgaagccc
6661	agattggcaa	gaggagctgg	tccattcccc	attcatggca	cagaacagtg	gcagggccca
6721	gctagcaggc	tcttctggcc	tccttggcct	cattctctgc	atagccctct	ggggatcctg
6781	ccacctgccc	tcttaccctg	ccgtggctta	tggggaggaa	tgcatacatc	cactttttt
6841	ttttaagcag	atgatgggat	aacatggact	gctcagtgcc	caggttatca	gtggggggac
6901	ttaattctaa	tctcattcaa	atggagacga	cctctgcaaa	ggcctggcag	ggggaggcaa
6961	gtttcatctg	tcagctcact	ccagcttcac	aaatgtgctg	agagcattac	tgtgtagcct
7021	tttctttgaa	gacacactcg	gctctttctc	acagcaagcg	tccagggcag	atggcagagg
7081	atctgcctcg	gcgtctgcag	gcgggaccac	gtcaggagg	gttccttcat	gtgttctccc
7141	tgtgggtcct	tggaccttta	gcctttttct	tcctttgcaa	aggccttggg	ggcactggct
7201	gggagtcagc	aagcgagcac	tttatatccc	tttgagggaa	accctgatga	cgccactggg
7261	cctcttggcg	tctgacctgc	cctcgccgct	tcccgcctg	ccgcagcgtg	cccacgtgcc
7321	cacgccccac	cagcaggcgg	ctgccccgga	ggccgtggcc	cgctgggact	ggccgccccct
7381	cccagcgtc	ccagggtctc	ggttctggag	ggccactttg	tcaagtggtt	tcagtttttc
7441	tttacttctt	ttgaaaatct	gtttgcaagg	ggaaggacca	tttcgtaatg	gtctgacaca
7501	aaagcaagtt	tgatttttgc	agcactagca	atggactttg	ttgcctttct	ttttgatcag
7561	aacattcctt	ctttactggt	cacagccacg	tgctcattcc	attcttcttt	ttgtagactt
7621	tgggccccacg	tgttttatgg	gcattgatcac	atatataaat	atatagatat	aaatatatat
7681	gaatacatctt	ttttaagttt	cctacacctg	gaggttgcac	ggactgtacg	accggcatga
7741	ctttatatattg	tatacagatt	ttgcacgcca	aactcggcag	ctttggggaa	gaagaaaaat
7801	gcctttctgt	tcccctctca	tgacatttgc	agatacaaaa	gatggaaatt	tttctgtaaa
7861	acaaaacctt	gaaggagagg	agggcgggga	agtttgcgtc	ttattgaact	tattcttaag
7921	aaattgtact	ttttattgta	agaaaaataa	aaaggactac	ttaaacattt	gtcataattaa
7981	gaaaaaaagt	tatatagca	cttgtgacat	accaataata	gagtttatgt	tatttatgtg
8041	gaaacagtgt	tttagggaaa	ctactcagaa	ttcacagtga	actgcctgtc	tctctcagat
8101	tgatttggag	gaatttttgt	ttgttttgtt	ttgttttgtt	ccttttatct	ccttccacgg
8161	gccaggcgag	cgccgcccg	cctcactggc	cttgtgacgg	tttatctga	ttgagaactg
8221	ggcgactcg	aaagagtccc	cttttccgca	cagctgtgtt	gactttttta	ttacttttag
8281	gtgatgtatg	gctaagattt	cactttaagc	agtcgtgaac	tgtgcgagca	ctgtggttta
8341	caattatact	ttgcatacgaa	aggaaaacct	ttcttcatgt	taacgaaact	gagcgtgttc
8401	ttagctcggc	ctcactttgt	ctctggcatt	gattaaaaagt	ctgctattga	aagaaaaaag (SEQ ID NO:8)

ADVISOR	FIG.
BY	SUBCLASS
DRAFTSMAN	

"SEQ ID NO: 9"

LRQGGTLTGKFMSTSSIPGCLLGVALEGDGSPHGHASLLQHVL
LEQARQQSTLIAVPLHGQSPVLTGERVATSMRTVGKLP
RHRPLSRTQSSPLPQSPQAL
QQLVMQQQHQFLEKQKQQQLQLGKILTKTGELPRQPT
THPEETEEELTEQQEVLLGE
GALTMPREGSTESESTQEDLEEEDEEEDGEEEDCIQV
KDEEGESGAEEGPDLEEPGA
GYKKLFSDAQPLQPLQVYQAPLSLATVPHQALGR
TQSSPAAPGGMKSPDPQPVKHLFT
TGVVYDTFMLKHQCMCGNTHVHPEHAGRIQSIWS
RLQETGLLSKCERIRGRKATLDEI
QTVHSEYIHTLLYGTSP LNRQKLD SKKLLGPI
SQKMYAVLPCGGIGVDSDTVWNEMHSS
SAVRMAVGCLLELAFKVAAGELKNGFAIIRPPGH
HAEESTAMGFCFFNSVAITAKLLQ
QKLNVGKVLIVDWDIHHGNGTQQAFYNDPSVLYI
SLHRYDNGNFFPGSGAPEEVGGGP
GVGYNVNVAWTGGVDPPIGDVEYLTAFRTVVMP
IAHEFSPDVVTLVSAGFDAVEGHLSP
LGGYSVTARCFGHLTRQLMTLAGGRVVLAL
EGGHDLT AICDASEACVSALLSVELQPL
DELVLQOKPNINAVATLEKVIETQSKHWSCVQK
FAAGLGRSLREAAQAGETEEAETVSA
MALLSVGAEEQAQAAAAAREHSPRAEPEMEQEPAL
(SEQ ID NO: 9)

FIG. 5B-1
FIG. 5B-2

FIG. 5B

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1  ccctgaggca gggtagcag ctgaccggca agttcatgag cacatcctct attcctggct
61 gcctgctggg cgtggcactg gaggcgacg ggagcccca cgggcattgcc tcctgctgc
121 agcatgtgct gttgctggag caggcccgcc agcagagcac cctcattgct gtgccactcc
181 acgggcagtc cccactagtg acgggtgaac gtgtggccac cagcatgcgg acggtaggca
241 agctcccgcg gcatcgggcc ctgagccgca ctcagtcctc accgctgccg cagagtcccc
301 aggccctgca gcagctggtc atgcaacaac agcaccagca gtccctggag aagcagaagc
361 agcagcagct acagctgggc aagatcctca ccaagacagg ggagctgcc aggcagcca
421 ccaccacccc tgaggagaca gaggaggagc tgacggagca gcaggaggtc ttgctggggg
481 agggagccct gaccatgcc gaggagggtt ccacagagag tgagagcaca caggaagacc
541 tggaggagga ggacgaggaa gaggatgggg aggaggagga ggattgcac caggttaagg
601 acgaggaggg cgagagtggc gctgaggagg gcccgcactt ggaggagcct ggtgctggat
661 acaaaaaact gttctcagat gccagccgc tgcagccttt gcagggtgtac caggcgcccc
721 tcagcctggc cactgtgcc caccaggccc tgggccgtac ccagtcctcc cctgctgccc
781 ctggggggcat gaagagcccc ccagaccagc ccgtcaagca cctcttcacc acagggtgtg
841 tctacgacac gttcatgcta aagcaccagt gcatgtgcgg gaacacacac gtgcaccctg

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FIG. 5B-1

FIG. 5B-2

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901 agcatgctgg ccgcatccag agcatctggt cccggctgca ggagacaggc ctgcttagca
961 agtgcgagcg gatccgaggt cgcaaagcca cgctagatga gatccagaca gtgcactctg
1021 aataccacac cctgctctac gggaccagtc cctcaaccg gcagaagcta gacagcaaga
1081 agttgctcgg ccccatcagc cagaagatgt atgctgtgct gccttgtggg ggcatacggg
1141 tggacagtga caccgtgtgg aatgagatgc actcctccag tgctgtgcgt atggcagtgg
1201 gctgcctgct ggagctggcc ttcaagggtgg ctgcaggaga gctcaagaat ggatttgcca
1261 tcatccggcc ccaggacac caccgaggg aatccacagc cacgggattc tgcttcttca
1321 actctgtagc catcacgcca aaactcctac agcagaagt gaacgtgggc aaggctcctca
1381 tcgtggactg ggacattcac catggcaatg gacccagca ggcgttctat aatgacccct
1441 ctgtgctcta catctctctg catcgctatg acaacgggaa ctctttcca ggctctgggg
1501 ctctgaaga ggttgggtgga ggaccaggcg tggggtacaa tgtgaacgtg gcatggacag
1561 gaggtgtgga ccccccatt ggagacgtgg agtaccttac agccttcagg acagtggtag
1621 tgccattgc ccacgagtc tcacctgatg tggtcctagt ctccgccggg tttgatgctg
1681 ttgaaggaca tctgtctcct ctgggtggct actctgtcac cgccagatgt tttggccact
1741 tgaccaggca gctgatgacc ctggcagggg gccgggtggt gctggccctg gagggaggcc
1801 atgacttgac cgccatctgt gatgcctctg aggttgtgt ctgggctctg ctcagtgtag
1861 agctgcagcc cttggatgag gcagtcttgc agcaaaagcc caacatcaac gcagtggcca
1921 cgctagagaa agtcacgag atccagagca aacactggag ctgtgtgcag aagttcgccg
1981 ctggtctggg ccggtccctg cgagaggccc aagcaggtga ggcagaggag gccgagactg
2041 tgagcgccat ggccttgctg tcggtggggg ccgagcaggc ccaggctgcg gcagcccggg
2101 aacacagccc caggccggca gaggagccca tggagcagga gcctgccctg tgacgccccg
2161 gccccatcc ctctcggtt caccatgtg atttgttta tttttcttat taaaaacaaa
2221 aagtcacaca ttc (SEQ ID NO:10)

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FIG. 5B-2

FIG. 6A

1 mtstgqdstt trrrsrqnp qspqdssvt skrnikkjav prsipnlaev kkkgkmmkklg
61 gameedlivg lqgmdlnlea ealagtglvl deqlnefhcl wddsfpegpe rlhaikeqli
121 qeglldrcvs fqarfaekee lmlvhsleyi dlmettgymn egelrvladt ydsvylhpns
181 yscacclasgs vlrlvdavlg aeirngmai rppghhaqhs lmdgycmfnh vavaaryaqq
241 khriirrvliv dwdvhgqgt qftfdqpsv lyfsihryeq grfwphlkas nwsttgfgqg
301 qgytinvpwn qvgmrdadyi aafhlvllpv alefqpqlvl vaagfdalqg dpkemaatp
361 agfaqlthll mglaggklil sleggyaira laegvsaslh tllgdpcpml espgapcrsa
421 qasvscalea lepfwevlvr stetverdnm eednveesee egpweppvlp iltwpvlqsr
481 tglvydqnmh nhcnlwdshh pevppqirilri morleelgia grcltittprp ateaelltch
541 saeyvghlra tekmtrelh ressnfdsiy icpstfacaq latgaacrly eavisgevin
601 gaavvrppgh haeqdaacgf cffnsvavaa rhaqtisgha lrilivdwdv hhgngtqhmf
661 eddpsvlyvs lhrydhgtff pmgdegassq igraagtgtf vnvawngprm gdadylaawh
721 rlvlpiafef npelvlvsag fdaargdplg gcqvspegya hlthllmgl sgrilileg
781 gynltsises maactrsilg dppplltlpr pplsgalasi tetiqvhrry wrslrvmkve
841 dregpssskl vtkkapqpak prlaermtrr ekkvleagmg kvtsasfgee stpgqtnset
901 avvalcqddp seaatggatl aqtiseaaig gamlgqttse eavggatpdq ttseetvgga
961 ildqtseda vggatigqtt seeavggatl aqtiseaame gatldqttse eapggtelig
1021 tplasstdhq tpptspvqgt tpqispstli gslrtlelgs esqgasesqa pgeenllgea
1081 agggqmadsm lmqgsrgltd qaiifyavtpl pwcphlvavc pipaagldvt qpcgdcgtiq
1141 enwvclscyq vycgryingh mlqhhgnsgh plvlsyidl s awcyycqayv hhqalldvkn
1201 iahqnkfged mphph (SEQ ID:11)

FIG. 6A

FIG. 6B-1
FIG. 6B-2
FIG. 6B-3

FIG. 6B

1 gggcagtccc ctgaggagcg gggctggttg aaacgctagg ggcgggatct ggcggagtgg
61 aagaaccgcg gcaggggcca agcctcctca actatgacct caaccggcca ggattccacc
121 acaaccaggc agcgaagaag taggcagaac cccagtcgc ccctcagga ctccagtgtc
181 acttcgaagc gaaatatataa aaaggagcc gttccccgct ctatcccaa tctagcggag
241 gtaagaaga aaggcaaat gaagaagctc ggccaagcaa tggagaaga cctaatacgtg
301 ggactgcaag ggatggatct gaacctcgag gctgaagcac tggcttgggtg
361 ttggatgagc agttaaatga attccattgc ctctgggatg acagcttccc ggaaggccct
421 gagcggctcc atgccatcaa ggagcaactg atccaggagg gcctccctaga tcgctgcgtg
481 tcctttcagg cccggtttgc tgaaaaggaa gagctgatgt tggttcacag cctagaatat

FIG. 6B-1

541 attgacctga tggaaacaac ccagtacatg aatgagggag aactccgtgt cctagcagac
601 acccacgact cagtttatct gcataccgaac tcatactcct gtgcctgcct ggcctcaggg
661 tctgtcctca ggctggtgga tgcggtcctg ggggctgaga tccggaacgg catggccatc
721 attaggcctc ctggacatca cgccagcac agtcttatgg atggctattg catgttcaac
781 cacgtggctg tggcagcccg ctatgctcaa cagaaacacc gcacccggag ggtccttatac
841 gtagattggg atgtgcacca cggccaagga acacagttca ccttcgacca ggacccagat
901 gtcctctatt tctccatcca ccgctacgag cagggtaggt tctggcccca cctgaaggcc
961 tctaactggt ccaccacagg ttctggccaa ggccaaggat ataccataa tgtgccttgg
1021 aaccagggtg ggatgcggga tgctgactac attgctgctt tcctgcacgt cctgctgcca
1081 gtcgccctcg agctccagcc tcagctggtc ctggtggccg ctggatttga tggcctgcaa
1141 ggggacccca agggcgagat ggccgccact ccggcagggt tggccagct aaccacctg
1201 ctcatgggtc tggcaggagg caagctgata ctgtctctgg aggtggcta caacctccg
1261 gccctggctg aaggcgtcag tgcttcgctc cacacccttc tgggagaccc ttgccccatg
1321 ccggagtcac ctggtgcccc gtcgccgagc gcccaggctt cagtttcctg tgctctggaa
1381 gcccttgagc ccttctggga gttctctgtg agatcaactg agaccgtga gaggacaac
1441 atggaggagg acaatgtaga ggagagcgag gaggaaggac cctgggagcc cctgtgctc
1501 ccaatcctga calggccagt gctacagtct cgcacagggc tggctctatga ccaaaatatg
1561 atgaatcact gcaacttgtg ggacagccac caccctgagg taccacagc catcttgccg
1621 atcatgtgcc gtctggagga gctgggccct gccgggcgct gctcacctt gacacccgc
1681 cctgccacag aggtgagct gctcacctgt cacagtgtg agtacgtggg tcatctccgg
1741 gccacagaga aaatgaaaac ccgggagctg caccgtgaga gttccaaact tgaactccatc
1801 tatatctgcc ccagtacctt cgctgtgca cagcttgcca ctggcgctgc ctggccgctg
1861 gtggaggctg tgctctcagg agaggtcctg aatgggtgctg ctgtggtgcg tccccagga
1921 caccacgcag agcaggatgc agcttgcggt ttttgctttt tcaactctgt ggctgtggct
1981 gctcgccatg ccagactat cagtgggcat gccctacgga tcctgattgt ggattgggat
2041 gtccaccacg gtaatggaac tcagcacatg tttaggatg acccagatgt gctatatgtg
2101 tccctgcacc gctatgatca tggcaccttc tccccatgg gggatgaggg tggcagcagc
2161 cagatcggcc gggccgcggg cacaggcttc accgtcaacg tggcatggaa cgggccccgc
2221 atgggtgatg ctgactacct agctgcctgg catcgcctgg tgcttcccat tgcctacgag
2281 ttaaccacag aactggtgct ggtctcagct ggctttgatg ctgcacgggg gatccgctg

2341 gggggctgcc aggtgtcacc tgagggttat gccacacctca ccacctgct gatgggcctt
2401 gccagtggcc gcatatcct tatcctagag ggtggctata acctgacatc catctcagag
2461 tccatggctg cctgcactcg cctccctcctt ggagaccac caccctgct gaccctgcca
2521 cggcccccac tatcagggc cctggcctca atcactgaga ccatccaagt ccatcgaga
2581 tactggcgca gcttacgggt catgaaggca gaagacagag aaggaccctc cagttctaag
2641 ttggtcacca agaaggcacc ccaaccagcc aaacctaggt tagctgagcg gatgaccaca
2701 cgagaaaaga aggttctgga agcaggcatg gggaaagtca cctcgcatc attggggaa
2761 gagtccactc caggccagac taactcagag acagctgtgg tggccctcac tcaggaccag
2821 ccctcagagg cagccacagg gggagccact ctggcccaga ccatttctga ggcagccatt
2881 gggggagcca tgctgggcca gaccacctca gaggagctg tcgggggagc cactcggac
2941 cagaccacct cagaggagac tgtgggagga gccattctgg accagaccac ctcagaggat
3001 gctgttgggg gagccacgct gggccagact acctcagagg aggtctgtagg aggagctaca
3061 ctggcccaga ccatctcgga ggcagccatg gagggagcca cactggacca gactacgtca
3121 gaggaggctc caggggcac cgagctgac caaactcctc tagcctcgag cacagaccac
3181 cagacccccc caacctcacc tgtgcaggga actacacccc agatatctcc cagtacactg
3241 attgggagtc tcaggacctt ggagctaggc agcgaacctc agggggcctc agaattctcag
3301 gccccaggag aggagaacct accaggagag gcagctggag gtcaggacat ggctgattcg
3361 atgctgacgc agggatctag gggcctcact gatcaggcca tattttatgc tgtgacacca
3421 ctgccctggt gtccccattc ggtggcagta tgccccatac ctgcagcagg cctagacgtg
3481 acccaacctt gtggggactg tggaaacaatc caagagaact ggggtgtgtct ctcttgctat
3541 caggtctacc gtggtcgtta catcaatggc cacatgctcc aacaccatgg aaattctgga
3601 caccgctgg tcctcagcca catcgacctg tcagcctggc gttactactg tcaggcctat
3661 gtccaccacc aggtctcctt agatgtgaag aacatcgccc accagaacaa gtttggggag
3721 gatagcccc acccacata agccccagaa tacggtccct cttcacctc tgaggcccac
3781 gatagaccag ttccagcctg ttccaggctg taccttggat gaggggtagc ctcccactgc
3841 atcccactct gaatactctt tgcaactccc caagagtgtt tatttaagtg ttaatacttt
3901 taagagaact gcgacgatta attgtggatc tccccctgcc catcgcccg catgagggga
3961 ccactactcc agcccagaag gaaagggggg cagctcagtg gcccacagag ttgaggggca
4021 tcatgaggat aacattggcg ggaggggagt taactggcag gcatggcaag ggagccgata
4081 taataaagta caagctgtt (SEQ ID NO: 12) gttgcatatg

1 mdlrvgrpp veppte1l alqrpqrllh hlflaglaqq rsvepmrlsm dtpmpelqv
61 pqeqlrql hkdkskrav assvvkqla evilkkqaa lertvhpns gipyrtlepi
1121 etegatrsm1 ssflppvpsi psdpphefpl rktvsepnlk lrykpksle rrknpllcke
1181 sappslrrrp aetlgdssps sstpasgcs spndsehgn pilgdsdrrt hptlgprgpi
2241 lgsphtplfl phglepeagg clpsrlqpil ldpsgshap lltpvglgpl pfhfaqsimt
3301 terlsgsglh wplsrtsep lppsatappp pgpmqprleq lkthvqvikr sakpsekprl
3361 rqipsaedle tdggpggvv ddglehreig hgqpeargpa plqghpqvii weqrlagr
4421 prgstgcdvi lplaqgghrp lsraqsspaa pasisapepa sqarvlssse tpartlpflt
4481 gliydsvmkl qcscgdnr hbehagriqs iwsrlqergl rsqceclrg r kasieelqsv
5541 hserhvlllyg tnplsrlkld ngklagialq rmfemlpcgg vgvdtdtiwn elhssnaarw
6601 aagsvtldlaf kvasrelkng favvrppghh adhstamfc ffnsvaiacr qlqqqskask
6661 askilivdw vhhgntqqc fyqdpvlyi slhrhddgnf fpgsgavdev gagsgegfnv
7721 nvawagglp pmgdpeylaa frivvmpiar efspdlvls agfdaaeahp aplgyghvsa
7781 kcfgymtqql mnlaggavvl alegghdlt icdaseacva allgnrvdpl seegwkqkpp
8841 pqchplsgr dpqaq (SEQ ID NO:13)

FIG. 7A

FIG. 7B-1

FIG. 7B-2

FIG. 7B

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1 ataataccta ccttgacga ccaacacag attaagtga gaaaacccc catgagagt
61 ttttgccatt gtcaagtga cctgaggag gctgagggg gatcaggctg tatcatgccc
121 ccgaggacaa actttccagt ttaccctgct cctctctct gtccctaggc tgcccaggc
181 cctgcgcaga cacaccagg cctcagccg agcccatgga cctgcgggtg ggccagcggc
241 cccagtgga gcccaccca gaggcccat tgctggcct gcagcgtccc cagcgcctgc
301 accaccact ctccctaga ggcctgacg ggcctgccc ggtggagccc atgaggctct
361 ccatggacac gccgacgcc gaggctgacg tgggacccc ggaacaaag ctgaggcagc
421 ttctccaca ggacaagag aagcgaagt ctgtagccag cagcgtggtc aagcagaagc
481 tagcggagt gattctgaa aacacagag cggccctaga aagaacagc catcccaaca
541 gcccggcat tccctacaga acccggagc ccctggagc ggaaggagc accgctcca
601 tgctcagcag ccttcgccct cctgctcca gcccggcag tgacccccc gagcactccc
661 ctctgcgcaa gacagtctct gaccccaacc tgaagctgcg ccataagccc aagaagtccc
721 cggagcggag gaagaatcca ctgctccga aggagagtgc gccccccag cccggcggc
781 gcccgcaga gacctcga gactcctcc caagtagtag cagcagccc gcatcagggt
841 gcagtcccc caatgacag gaggacggc ccaatcccat cctgggcgac agtgaccgca
901 ggaccatcc gactctggc cccgggggc caatcctggg gagccccac actccctct
961 tcctgcccc tggtctggag cccgaggctg ggggcacctt gccctccgc ctgcagccca
1021 tcctctctct ggacccctca ggctctcatg cccgctgct gactgtgccc gggcttggc
1081 ccttgccctt ccactttgcc cagtccttaa tgaccacga gcggctctct gggtcaggcc
1141 tccactggcc actgagccg actcgtcag agccctgccc cccagtgcc accgctccc
1201 caccgcccgg cccatgcag cccgcctgg agcagctcaa aactcacgtc caggtgatca
1261 agaggtcagc caagccgagt gagaagccc ggctgcggca gataccctcg gctgaagacc
1321 tggagacaga tggcggggga ccggggccag tggtaggacga cggcccggag cacagggagc

FIG. 7B-1

1381 tgggcatgg gcagcccgag gccagaggcc ccgctcctct ccagcagcac cctcaggtgt
1441 tgctctggga acagcagcga ctggctgggc ggctcccccg gggcagcacc ggggacactg
1501 tgctgcttcc tctggcccag ggtgggcacc ggcctctgtc ccgggctcag tcttccccag
1561 ccgcacctgc ctcaactgtca gccccagagc ctgccagcca ggcccagatc ctctccagct
1621 cagagacccc tgccaggacc ctgcccttca ccacagggct gatctatgac tcggtcatgc
1681 tgaagcacca gtgctcctgc ggtgacaaca gcaggcaccc ggagcacgcc ggccgcatcc
1741 agagcatctg gtcccggctg caggagcggg ggccctcgag ccagtgtgag tgtctccgag
1801 gccggaaggc ctccctggaa gagctgcagt cggctccactc tgagcggcac gtgctcctct
1861 acggcaccaa cccgctcagc cgcctcaaac tggacaacgg gaagctggca gggctcctgg
1921 cacagcggat gtttgagatg ctgccctgtg gtggggttgg ggtggacact gacaccatct
1981 ggaatgagct tcattccLcc aatgcagccc gctgggcccg tggcagtgtc actgacctcg
2041 ccttcaaatg ggcttctcgt gagctaaaga atgggtttcgc tgtggtgcgg ccccaggac
2101 accatgcaga tcattcaaca gccatgggct tctgcttctt caactcagt gccatcgcct
2161 gccggcagct gcaacagcag agcaaggcca gcaaggccag caagatcctc attgtagact
2221 gggacgtgca ccatggcaac ggcacccagc aaaccttcta ccaagacccc agtgtgctct
2281 acatctccct gcatcgccat gacgacggca acttcttccc ggggagtggg gctgtggatg
2341 aggtaggggc tggcagcggc gagggcttca atgtcaatgt ggccctgggt ggaggtctgg
2401 acccccccac gggggatcct gagtacctgg ctgctttcag gatagtcgtg acgcccacgt
2461 cccgagagtt ctctccagac ctagtccctgg tgctcgccgg atttgatgct gctgagggtc
2521 acccgccccc acLgggtggc taccatgttt ctgccaaatg ttttgatac atgacgcagc
2581 aactgatgaa cctggcaggc ggcgcagtgg tgctggcctt ggaggggtggc catgacctca
2641 cagccatctg tgacgcctct gaggcctgtg tggctgctct tctgggtaac aggttggatc
2701 ccctttcaga agaaggctgg aaacagaaac ccaacctca atgccactcg ctctctggag
2761 gccgtgatcc ggggtgcacag taaatactgg ggctgcatgc agcgcctggc ctctgttcca
2821 gactcctggg tgcctagagt gccagggggct gacaaaagaag aagtggaggc agtgaccgca
2881 ctggcgctcc tctctgtggg catcctggct gaagataggc cctcggagca gctggtggag
2941 gaggaagaac ctatgaatct ctaaggctct ggaacctct gcccgccac catgcccttg
3001 ggacctgggt ctcttctaac ccctggcaat agcccccat cctgggtctt tagagatcct
3061 gtgggcaagt agttggaacc agagaacagc ctgcctgctt tgacagttat ccaggggagc
3121 gtgagaaaat c (SEQ ID NO:14)

APPROV	C. B. FIG.	
BY	CLASS	SUBCLASS
RAFTSMAN		

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1 meeppeepads gqslvpvyiy speyvsmcde lakipkrasm vhsleayal hkqmrivkpk
61 vasmeematf htdaylqlh kvsqegdddh pdsieyglgy dcpategifd yaaaiggati
121 taaqclidgm ckvainwsgg whhakdeas gfcylndavl gilrlrrkfe rilyvdlldlh
181 hgdgvedafs ftskvmtvsl hkfspgffpg tgdvsdvglg kgryysvnpv iqdgiaqdeky
241 yqicesvlke vyqafnpkav vlqlgadtia gdpmcdfnmt pvgigkclky ilqwqlatli
301 lggggynlan tarcwtyltg vilgkltisse ipdbefftay gpdvyleitp scrpdrneph
361 riqqilnyik gnlkhvv (SEQ ID NO:15)

FIG. 8A

FIG. 8B

1 gaaattcggc acgagctcgt gccgaattcg gcacgagaac ggttttaagc ggaagatgga
 61 ggagccggag gaaccggcg acagtgggca gtcgctggc cggtttata tctatagtcc
 121 cgagtatgtc agtatgtgtg actccctggc caagatcccc aacgggcca gtatggtgca
 181 ttctttgatt gaagcatatg cactgcataa gcaaatgagg atagttaagc ctaaagtggc
 241 ctccatggag gagatggcca ccttccacac tgatgcttat ctgcagcatc tccagaaggc
 301 cagccaagag ggcgatgatg atcatccgga ctccatagaa tatgggctag gttatgactg
 361 ccagccact gaaggatat ttgactatgc agcagctata ggagggcta cgatcacagc
 421 tgcccaatgc ctgattgacg gaatgtgcaa agtagcaatc aactggctcg gaggtggca
 481 tcatgcaaag aaagatgaag catctggttt tcgttatctc aatgatgctg tcctgggaat
 541 attacgattg cgacggaaat ttgagcgtat tccctacgtg gattcggatc tgcaccatgg
 601 agatggtgta gaagacgcat tcagtttcac ctccaaagtc atgaccgtg ccctgcacaa
 661 attctcccca ggatttttcc caggaacagg tgacgtgtcc gacgttggcc tagggaaggg
 721 acggtactac agtgtaaatg tgcccatcca ggatggcata caagatgaaa aatatatcca
 781 gatctgcgaa agtgactaa aggaagtata ccaagcctt aatcccaag cagtggctct
 841 acagctggga gccgacacaa tagctgggga tccatgtgc tcctttaaca tgactccagt
 901 gggaattggc aagtgtctca agtacatccc tcaatggcag ttggcaacac tcatttcggg
 961 aggaggaggc tataaccttg ccaacacggc tcgatgctgg acatactga cgggggtcat
 1021 cctagggaaa acactatcct ctgagatccc agatcatgag ttttcacag catatggtcc
 1081 tgattatgtg ctggaaatca cgccaagctg ccggccagac cgcaatgagc ccacccgaat
 1141 caacaaatc ctcaactaca tcaaagggaa tctgaagcat gtggtctagt tgacagaaag
 1201 agatcagggt tccagagctg aggagtgggtg cctataatga agacagcgtg ttatgcaag
 1261 cagtttgrgg aatttgtgac tgcagggaaa atttgaaga aattacttc tgaataatc
 1321 caaggggcat caagtggcag ctggcttcct ggggtgaaga ggcaggcacc ccagagtcc
 1381 caactggacc taggggaaga aggagatarc ccacatttaa agttcttatt taaaaaaca
 1441 cacacacaca aatgaaattt ttaatcttg aaaattattt ttaagcgaat tggggagggg
 1501 agtattttaa tcattctaaa tgaacagat cagaagctgg atgagagcag tcaccagt
 1561 gtagggcagg aggcagctga caggcagggn tngggcctcn ggaccancca ngtggagccc
 1621 tgggagagan ggtactgac ngcagactgg gagg (SEQ ID NO:16)

FIG. 8B

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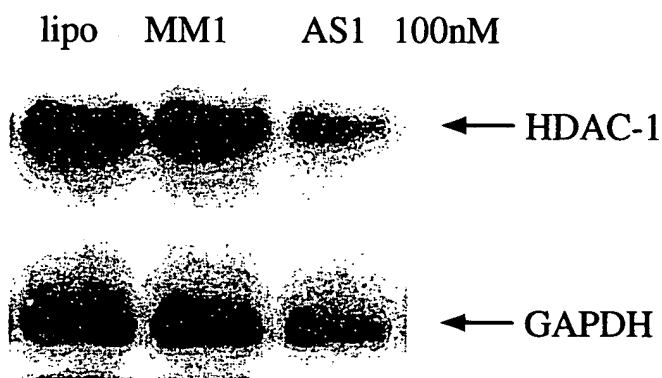


FIG. 9A

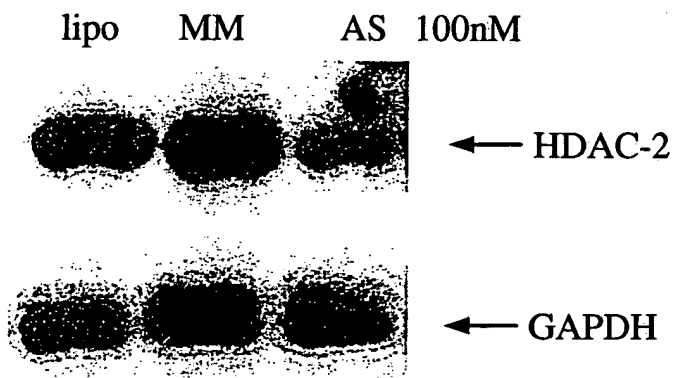


FIG. 9B

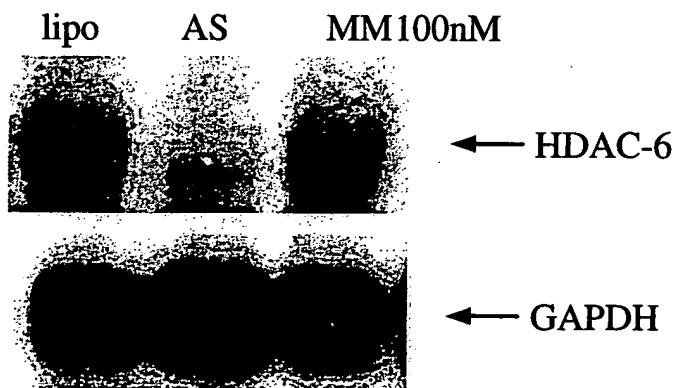


FIG. 9C

2006-06-06 10:00:00

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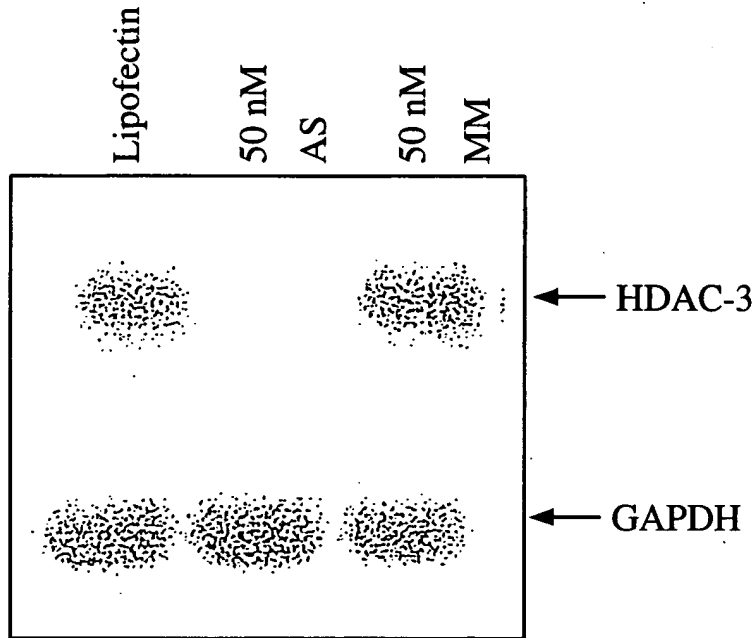


FIG. 9D

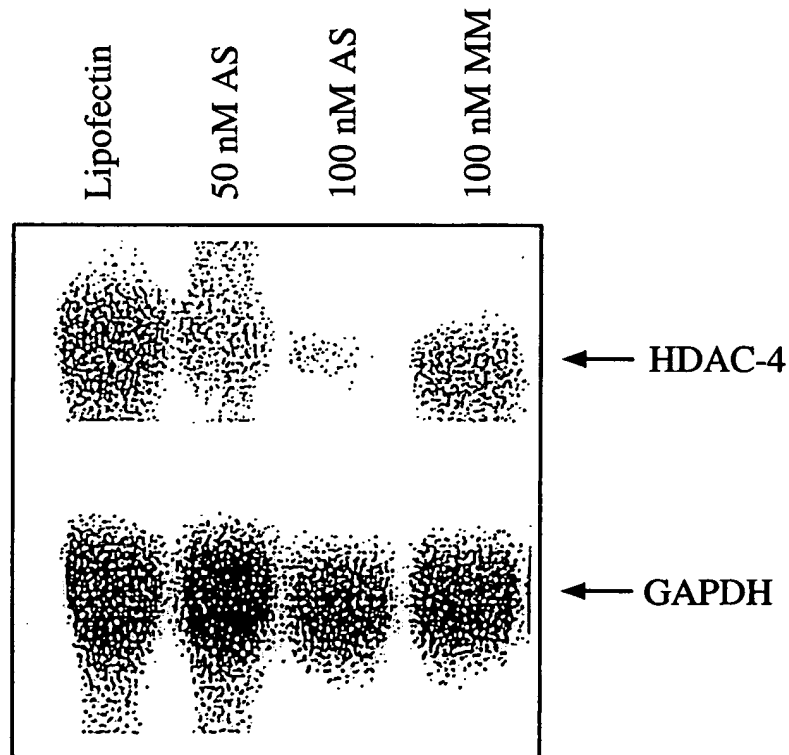


FIG. 9E

FIG. 9D-FIG. 9E

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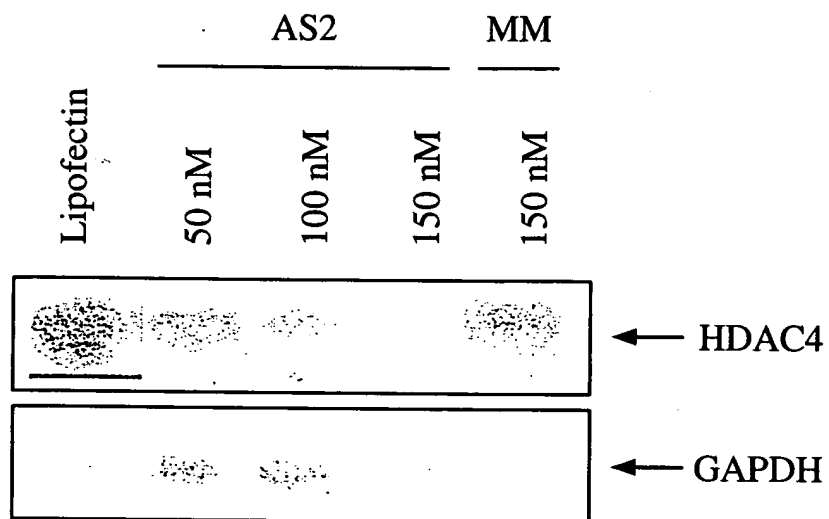


FIG. 9F

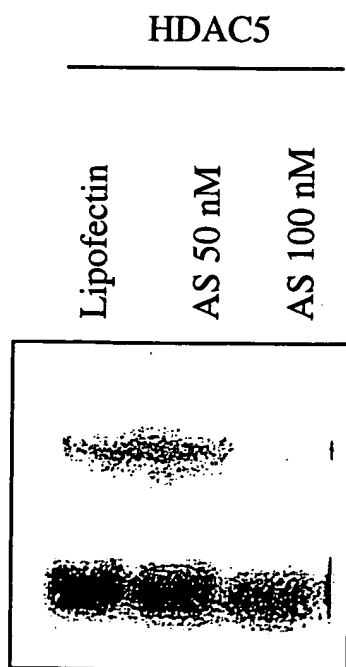


FIG. 9G

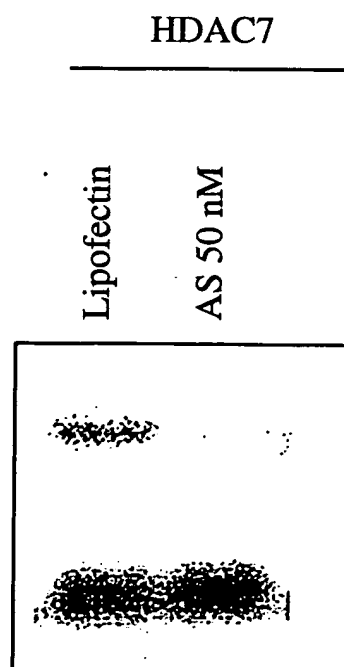
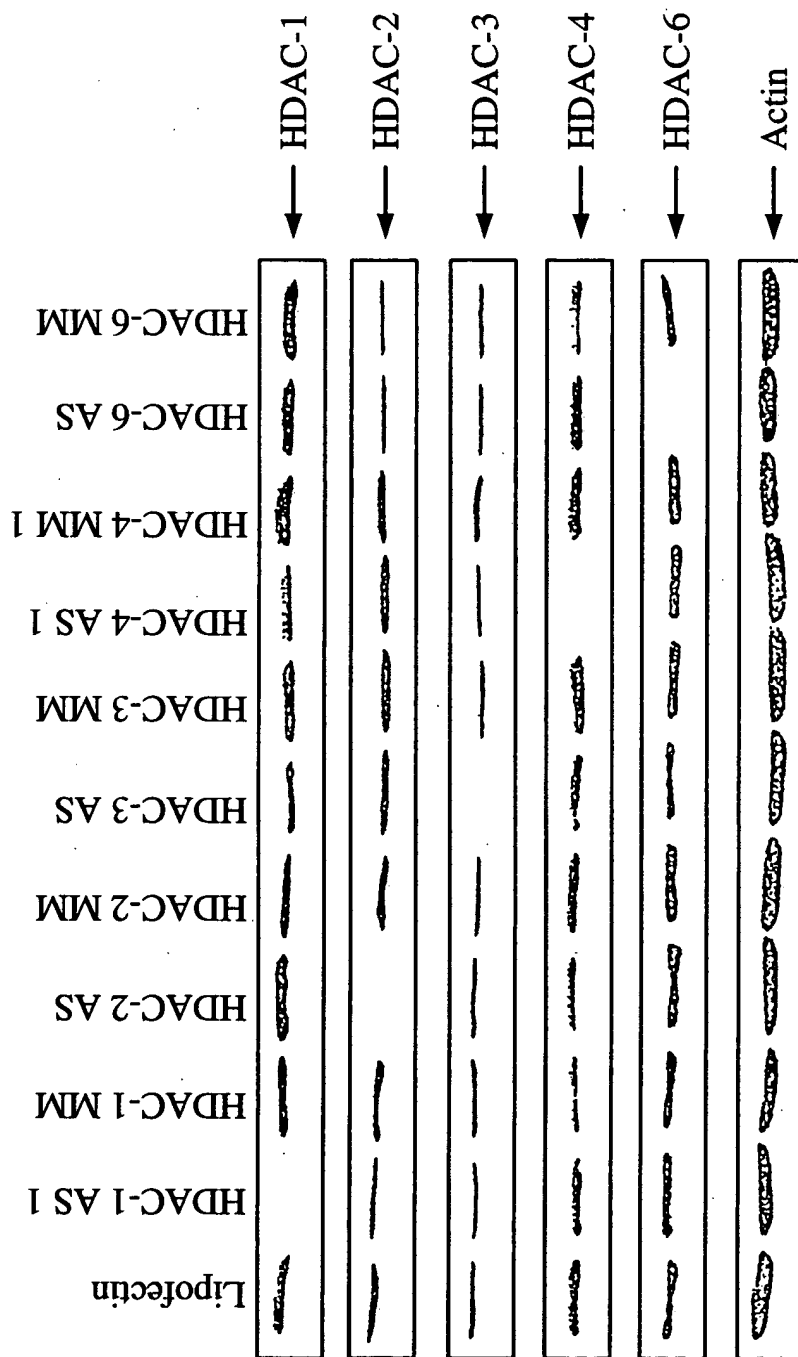


FIG. 9H

FIG. 91

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AS = Antisense
MM = Mismatch
NS = Non-specific control
3 day treatment
Oligonucleotide cone - 50nM

FIG. 10A

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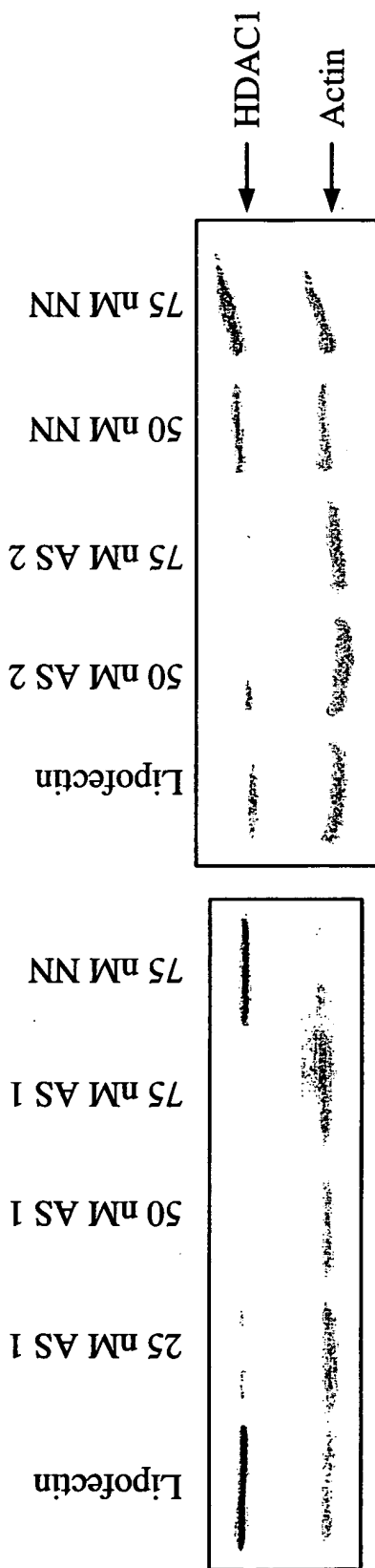


FIG. 10B

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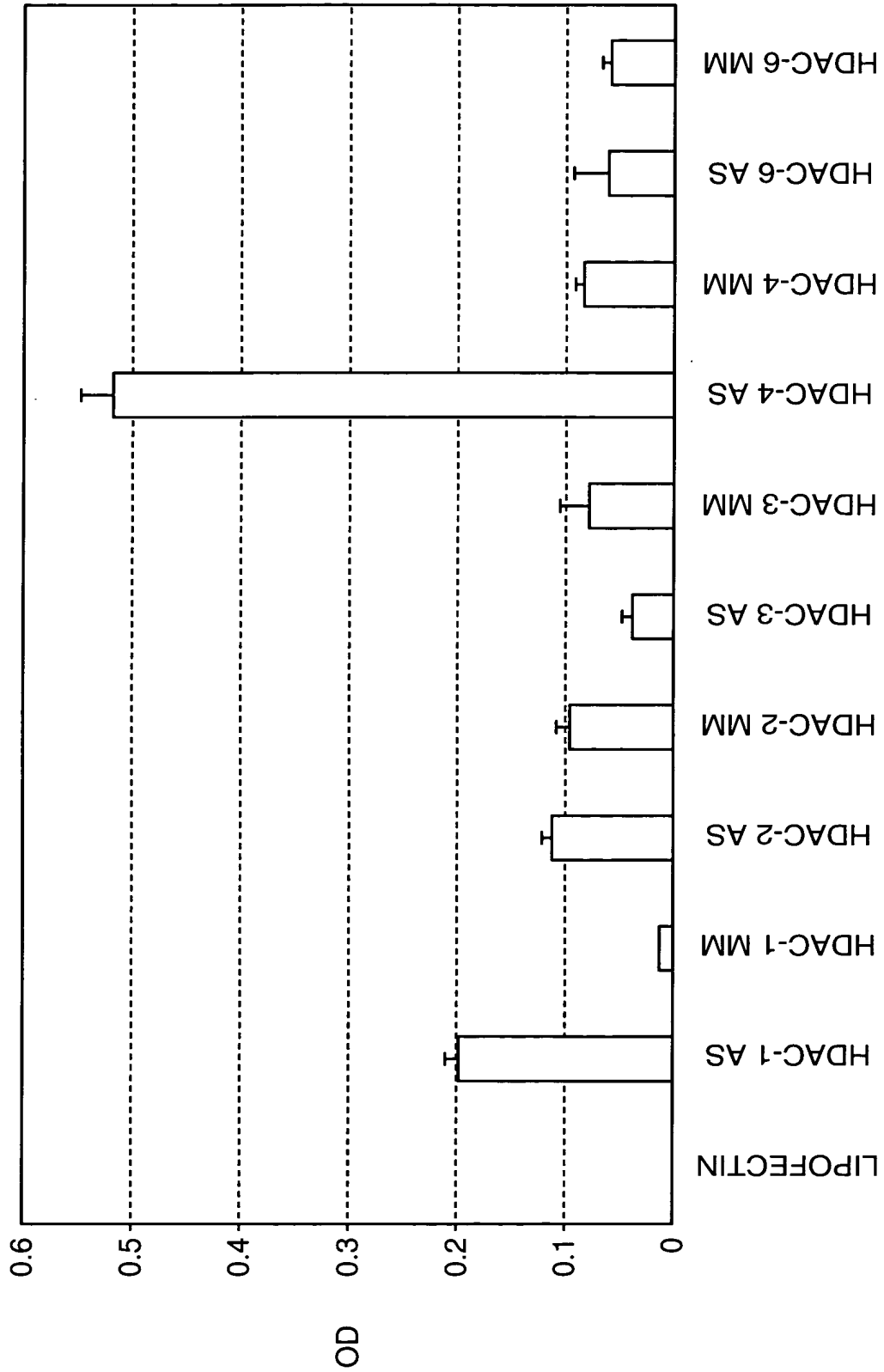


FIG. 11

FIG. 11

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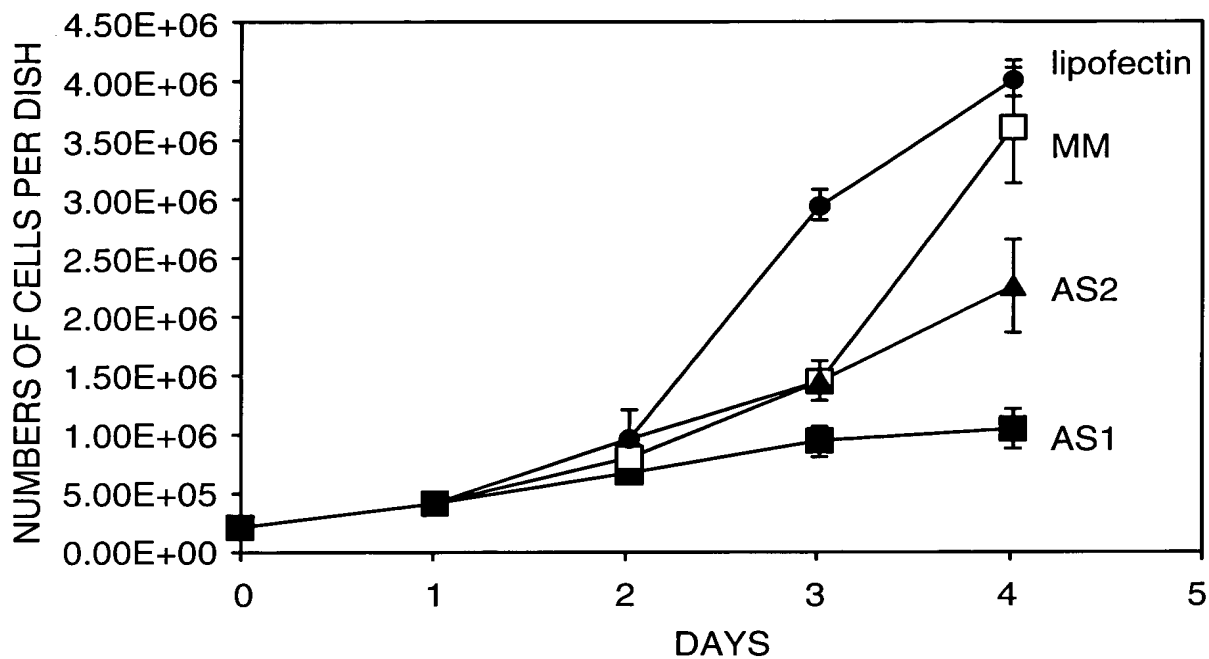


FIG. 12A

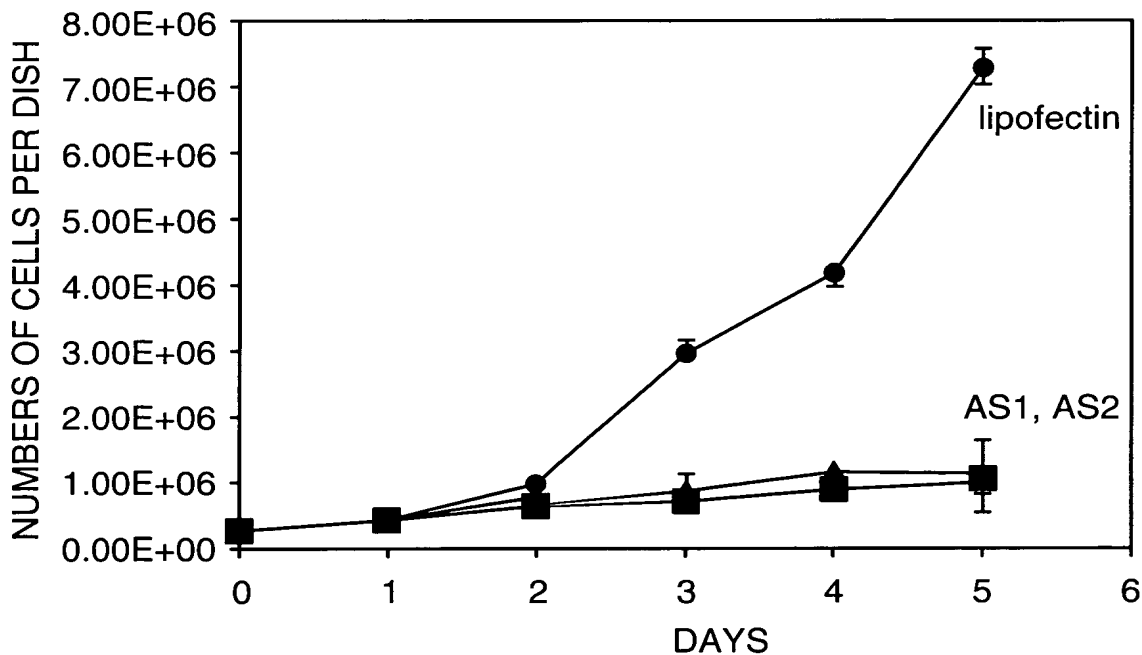


FIG. 12B

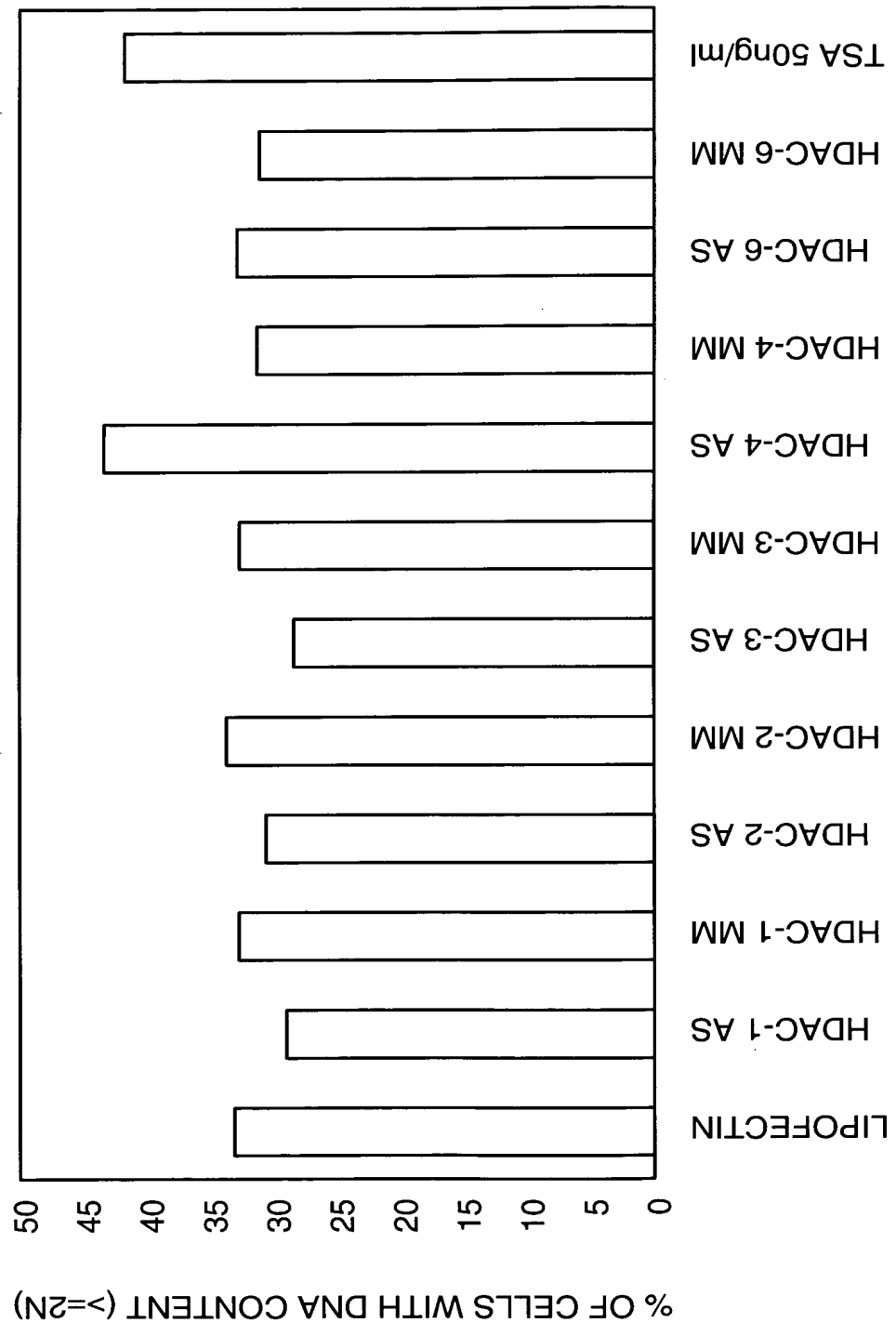


FIG. 13

FIG. 13 is a horizontal bar chart showing the percentage of cells with DNA content $\geq 2N$ for various treatments. The y-axis represents the percentage of cells with DNA content $\geq 2N$, ranging from 0 to 50. The x-axis lists the treatments: LIPOFECTIN, HDAC-1 AS, HDAC-1 MM, HDAC-2 AS, HDAC-2 MM, HDAC-3 AS, HDAC-3 MM, HDAC-4 AS, HDAC-4 MM, HDAC-6 AS, HDAC-6 MM, and TSA 50ng/ml. The data shows that HDAC-4 AS has the highest percentage of cells with DNA content $\geq 2N$ at approximately 46%, while HDAC-3 AS has the lowest at approximately 28%.

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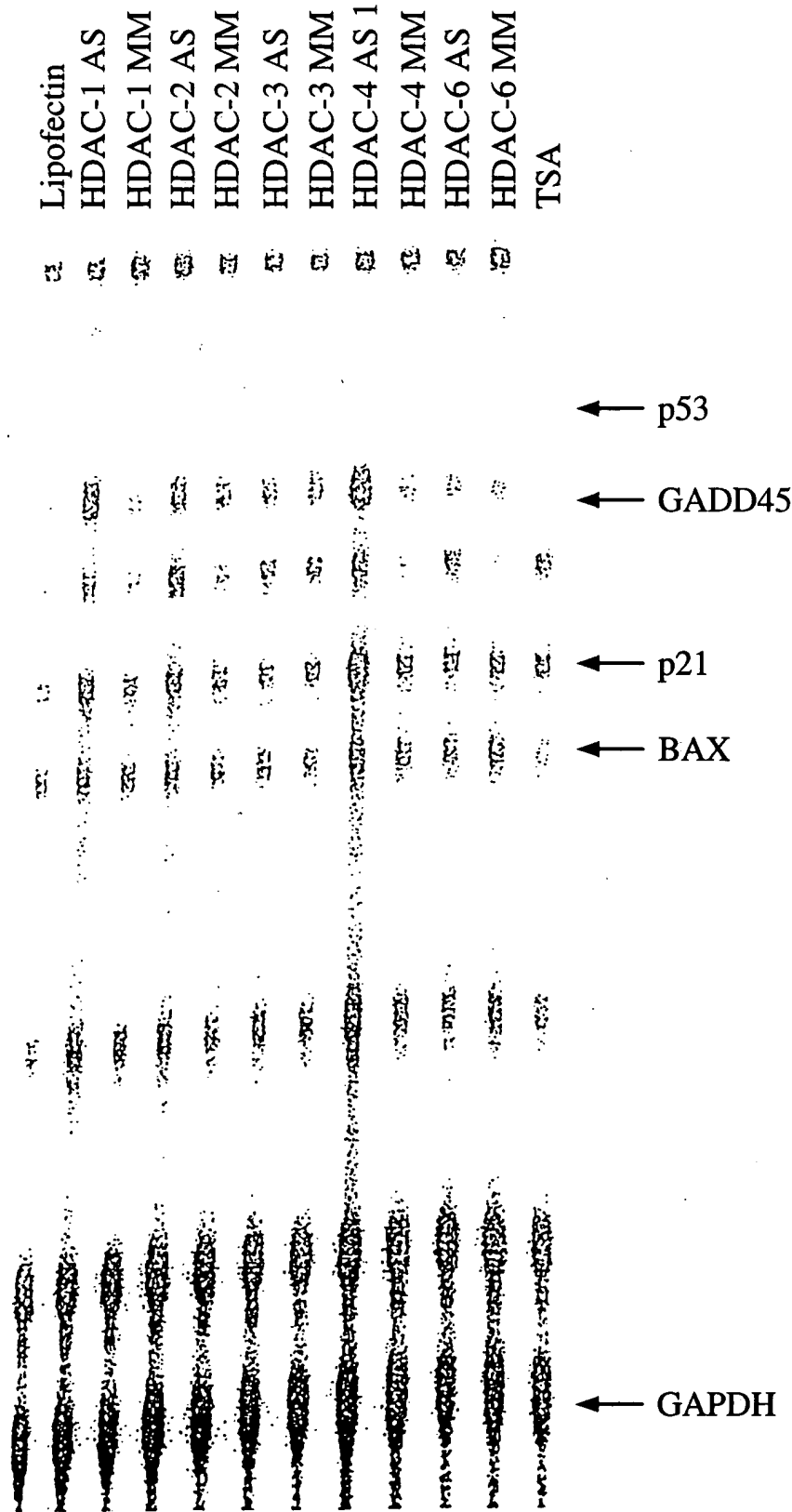


FIG. 14

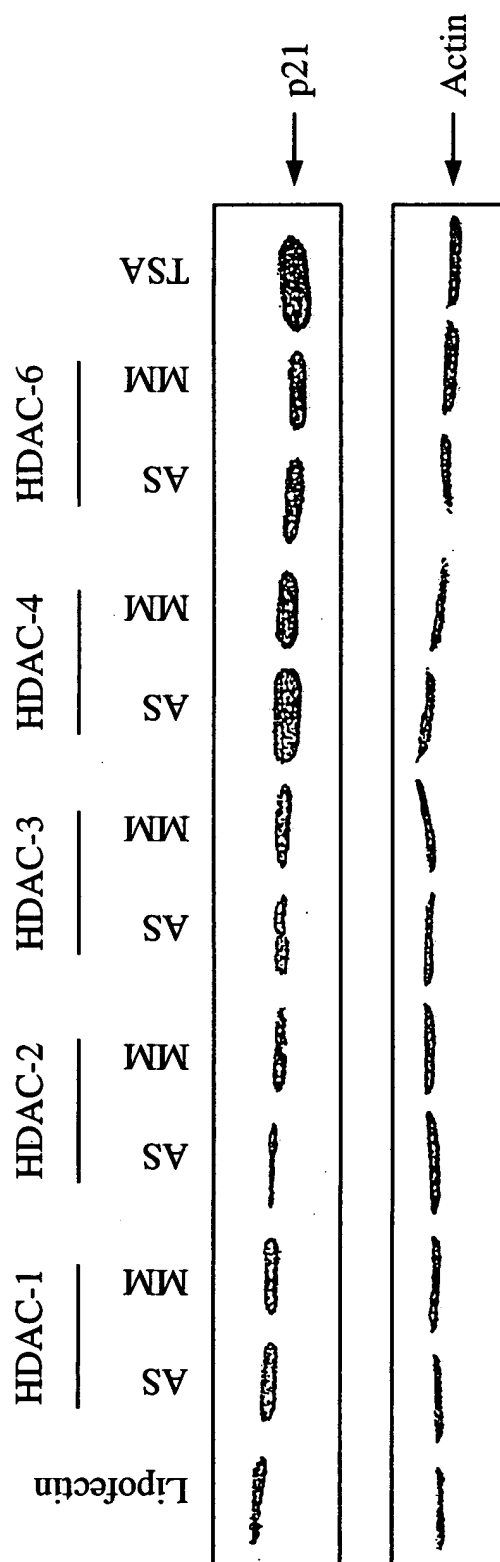


FIG. 15

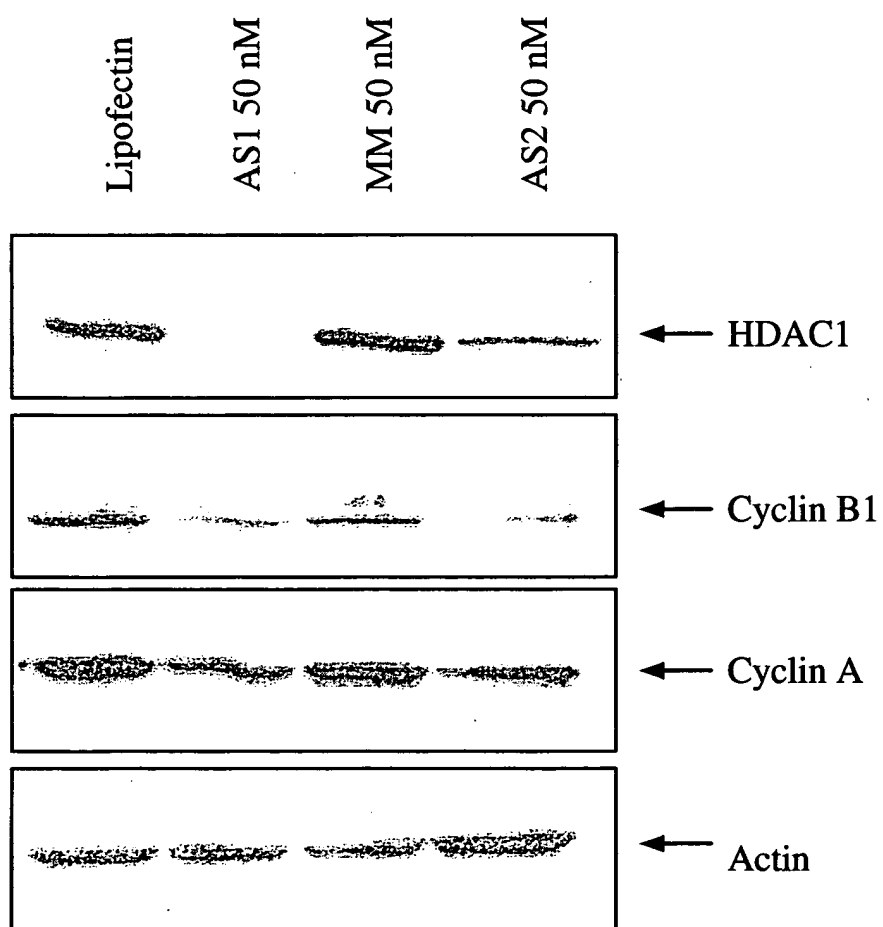
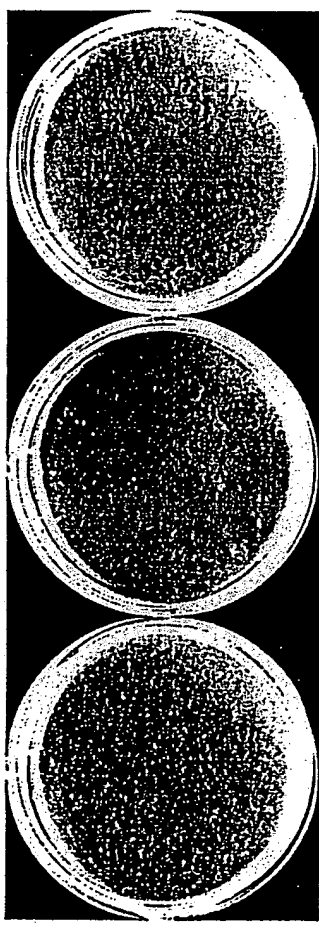


FIG. 16

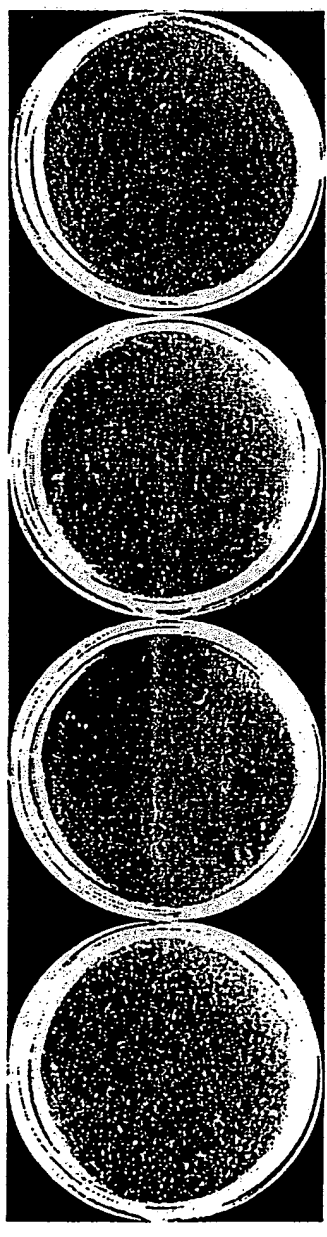
FIG. 17A

Lipofectin HDAC-1 ASI HDAC-1 MM



Colony Numbers -1200 -120 -1160 FIG. 17A

Lipofectin HDAC-1 ASI HDAC-2 AS HDAC-6 AS



Colony Numbers -1200 -120 -890 -730 FIG. 17B

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Compound 3

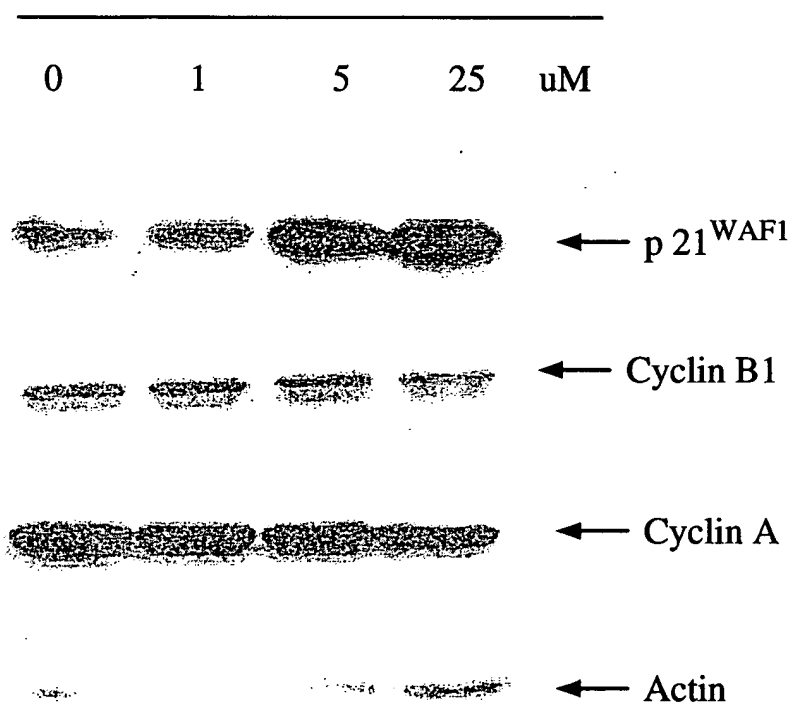


FIG. 18